CHEMISTRY AND BIOCHEMISTRY 103.1

Spring 2020

Course Coordinator: Olga Binyaminov

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Lab Instructor: Olga Binyaminov

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Lab Section (Location): Thursday 1:40-4:30 (RE 218B)

Office Hours: Mondays 8:15 am - 9:15 am

Tuesdays 8:30 am - 9:30 am

Thursdays 8:30 am - 9:30 am

Office: RE206B

Grading: **Pre-Lab Assignment: 10%**

Pre-lab assignment must be completed and submitted to the instructor at the beginning of the class, before the pre-lab lecture.
The experimental lab procedures read before coming to class each day.

Lab Reports and Post-Lab Questions: 60%

The full lab report is required for each experiment and is due at the beginning of the next lab class following the completion of the lab experiment. Your lab report should include the typed report, report sheet(s), and answered post-lab questions stapled together.

Final Exam: 20%

The final exam will be partially practical exam, scheduled as per syllabus. The practical exam will be composed of several stations, with a variety of experiments done in class, and different questions pertaining to labs. There is no option for a make - up final exam. You must attend the exam as scheduled on this syllabus, not as per CUNYFirst.

Lab Techniques: 10%

You will be graded on your class performance, and it is 10% of your lab grade. These 10% include your lab techniques, efficiency of work, and cleaning of station as well as disposal of waste.

All pre-labs, report sheets, and post-lab questions are to be found in the laboratory Manual (Saffran & Binyaminov). Bring these to class (with the pre-lab portion already completed) when you are to do the experiment. Data measured in laboratory is to be recorded directly on your report sheets. Read the background information and information from the lab pages for that week's experiment **prior** to coming to class.

Laboratory experiments are to be mainly performed **as groups** (and evaluated by the instructor), unless otherwise is instructed by your instructor. during group experiment, each student must work, and not just stand and watch. Reports must be done individually.

Course description:

Introduction to a variety of basic biochemical methods including enzymology, colorimetry, and chromatography used to examine metabolic processes.

Course objectives:

This course provides an introduction to the use of chemical methods to measure and characterize biologically important molecules. After taking this course students should

- be familiar with biochemical techniques such as chromatography and spectrophotometry
- have experience in the extraction, resolution, and identification of biochemicals from biological samples
- understand how to use qualitative analytical techniques to resolve and characterize biologically important molecules such as proteins
- be able to use quantitative analytical techniques to measure quantities and concentrations of biochemicals

Course policies:

You must adhere to the CUNY policy on academic integrity, as described at:
qcpages.qc.cuny.edu/provost/policies/index.html

Lab Attendance Policy

- Attendance in laboratory is mandatory. An absence of 3 or more labs will result in a grade of F for the lab.
- Students must report to lab on time. Late students may not be allowed in class. No lab make-up is allowed due to lateness for class.
- Late lab reports will be penalized 5 points per week. The first five-point penalty will be applied to lab reports that are submitted after the lab class time when they are due. Lab reports more than two (2) weeks late will not be accepted.
- All reports must be first submitted to blackboard SafeAssign, for plagiarism check. A printed copy should be given to the instructor at the beginning of the class. Any plagiarized report will result in a grade of zero, and could be reported to dean's office for further actions.
- Failure to hand in a lab report will result in a grade of zero for that lab, which will be averaged into your overall laboratory grade.

- A missed laboratory class (for a *valid* reason – illness, verified by a note from a registered physician; court appearance, verified by a note from an officer of the court; death in the family, preferably your own) can be made-up by following this procedure:
    - Only **1 make-up lab** per semester is allowed. It must be approved by your instructor and by the lab coordinator.
    - Obtain a lab make-up form from the stockroom website should be obtained. http://chem.qc.cuny.edu/~chemdept/
    - Provide the lab date and time which you would like to attend to make up the missed lab. Your instructor will email the lab instructor of your selected make-up day. It is not guaranteed that you will be allowed in, as there is a maximum allowed capacity of students in every lab, therefore wait for conformation from your instructor. Have another optional make-up date, just in case.
    - Attend an alternate Chem. 103.1 laboratory class that is working on the same experiment that you missed during the week the experiment is being performed. Get **signed** permission from the instructor of the section you hope to attend to make-up a missed laboratory experiment.

Laboratory Schedule – Spring 2020

Week	Experiment
Week 1	Check in, **Safety Video**
Week 2	**Experiment #8:** Vitamin C
Week 3	**Experiment #7:** Acid Base Properties of Amino Acids
Week 4	**Experiment #1**: Spectrophotometer
Week 5	**Experiment #6:** Protein Assay
Week 6	**Experiment #5A:** Enzyme Kinetics. Part 1: Effect of Enzyme Concentration
Week 7	**Experiment #5B:** Enzyme Kinetics. Part 2: Effect of Substrate Concentration
Week 8	**Experiment #5C:** Enzyme Kinetics. Part 3: Enzyme Specificity and Temp. Effect.
Week 9	**Experiment #9**: Cellular Respiration
Week 10	**Experiment #10**: Carbohydrate Determination
Week 11	**Experiment #2:** Vegetable Carotene Extraction
Week 12	**Experiment #4:** Thin Layer Chromatography
Week 13	**Experiment #3:** Size Exclusion Chromatography
Week 14	**Final Exam** Check-out (No experiments performed)
	See next page for dates listed by day of week lab meets

Weekly Schedule of All Sections – Spring 2020:

Week # (Experiment)	**Sankar C. V.** Monday 9:15am-12:05pm RE218B	**Sankar C.** Tuesday 9:40 am-12:30 pm RE153	**Dickson** Wednesday 1:40 pm-4:30 pm RE151	**Binyaminov** Thursday 1:40 pm-4:30 pm RE218B
1 (Check-in)	Jan 27	Jan 28	Jan 29	Jan 30
2 (Expt 8)	Feb 3	Feb 4	Feb 5	Feb 6
3 (Expt 7)	Feb 10	Feb 11	Feb 19	Feb 13
4 (Expt 1)	Feb 24	Feb 18	Feb 26	Feb 20
5 (Expt 6)	Mar 2	Feb 25	Mar 4	Feb 27
6 (Expt 5A)	Mar 9	Mar 3	Mar 11	Mar 5
7 (Expt 5B)	Mar 16	Mar 10	Mar 18	Mar 12
8 (Expt 5C)	Mar 23	Mar 17	Mar 25	Mar 19
9 (Expt 9)	Mar 30	Mar 24	Apr 1	Mar 26
10 (Expt 10)	Apr 6	Mar 31	Apr 7 ** Tue	Apr 2
11 (Expt 2)	Apr 20	Apr 21	Apr 22	Apr 23
12 (Expt 4)	Apr 27	Apr 28	Apr 29	Apr 30
13 (Expt 3)	May 4	May 5	May 6	May 7
14 (Check-out and **Final Exam**)	May 11	May 12	May 13	May 14

Important Dates:

- Wednesday February 12 – College closed
- Monday February 17 – College closed
- ** April 7 is a Tuesday with a Wednesday schedule
- April 8-April 16 – Spring Recess, no classes